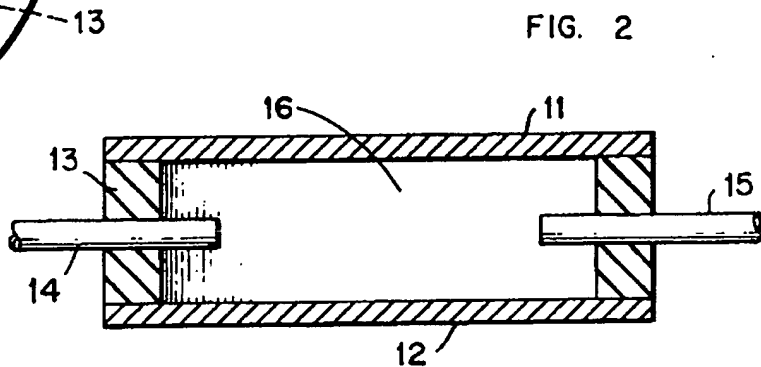
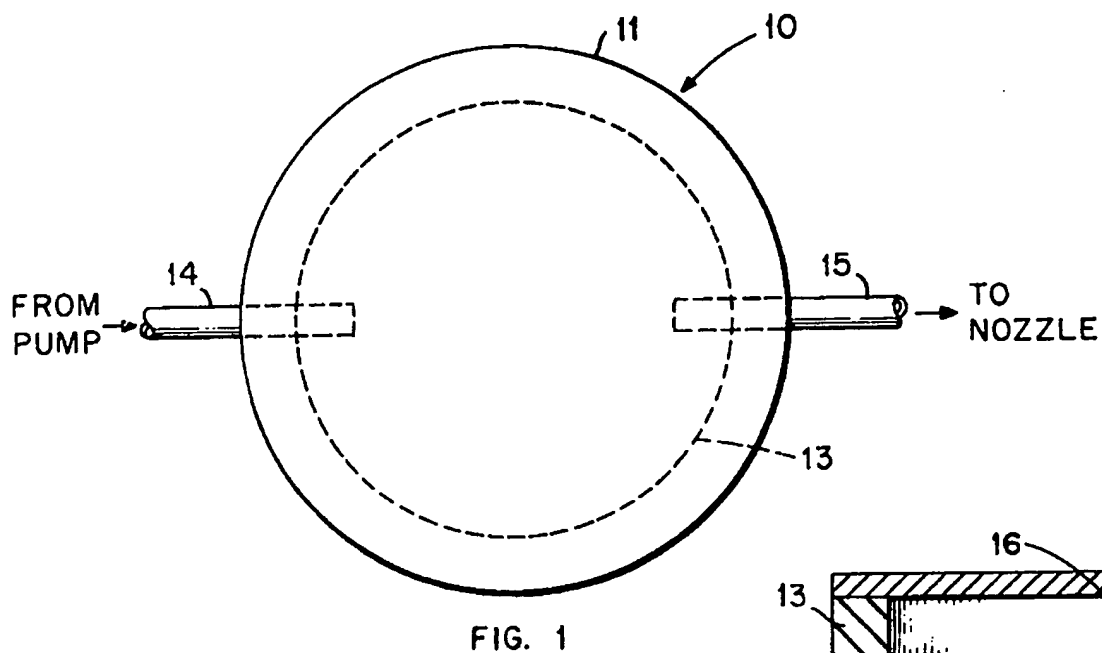


ACCUMULATOR FOR INK SUPPLY SYSTEM OF AN INK JET PRINTER

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DISCLOSURE TEXT:

1p. Accumulators, also known as surge tanks, are used in ink supply systems to absorb pressure variations in the ink supplied to

the ink jet nozzle, so that the constant jet stream flow is not

disturbed by fluctuations in pressure in the ink supply system. An

economical and highly reliable accumulator 10 comprises a pair of

circular, thin, flexible metallic plates 11 and 12 bonded near the

periphery to a flexible cylindrical side wall 13. Input tube 14 and

exit tube 15 are sealed into openings in side wall 13 and extend into

chamber 16.

- When ink flows under pressure in the system, chamber 16 is

filled with ink without air or other gas present. As pressure

variations occur on the input side, accumulator 10 expands or contracts to absorb the variations without disturbing the pressure of

ink in exit tube 16. With flexible plates 11 and 12 and flexible

side wall 13, which provides rotational flexibilities to the plates

around the edges, the stresses produced by the pressure variations is

equally distributed between the center of the plates and the edges.

- For example, in a preferred structure that withstands working

pressure of about 100 psi and limits the pressure fluctuation below

0.2 psi when the volume change is about 0.00003 cubic inches, plates

11 and 12 were stainless steel with a thickness of 0.015 inch and a

diameter of 1 inch. Sidewall 13 was a rubber structure giving

rotational rigidity of 31 in-lb/rad/in.

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